



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/647,657

08/25/2003

William Cohn

BIH-002AX

2131

207 7590 12/16/2008  
WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP  
TEN POST OFFICE SQUARE  
BOSTON, MA 02109

EXAMINER

BACHMAN, LINDSEY MICHELE

ART UNIT

PAPER NUMBER

3734

MAIL DATE

DELIVERY MODE

12/16/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/647,657	<b>Applicant(s)</b> COHN ET AL.	
	<b>Examiner</b> LINDSEY BACHMAN	<b>Art Unit</b> 3734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8-25-08</u> .                                                 | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 25 August 2008 has been entered.

### ***Response to Arguments***

Applicant's arguments filed 25 August 2008 have been fully considered but they are not persuasive.

Regarding the method claims, Applicant argues that Applicant argues that the device of Phillips'965 doesn't have the same color-coding as claimed by Applicant. This argument is not persuasive because it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3734

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-4, 16, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phillips'965 in view of Soviet Union Patent 513696 (SU'696).**

Claim 1-4, 20, 21-23: Phillips'965 teaches a method of implanting an artificial valve including placing a first suture (26) through tissue (40) at a first position using a first needle (32); placing a second needle (34) through tissue (40) at a second position, and repeating this processes using additional needles. The prosthetic device (16) is attached to the annulus body tissue (40) using needles in the suturing system and is then secured to the body (column 2, lines 15-46). Phillips'965 teaches color-coding to identify different threads (column 1, lines 23-57 and column 2, lines 40-44). Phillips'965 does not explicitly teach color-coding different sutures attached to the same needle. Phillips does not teach using a suture system that contains at least three needles connected by suture strands.

SU'696 teaches suture system that contains three needles (2) connected by sutures (5, 6, 7, 8) that are spread apart by a pre-determined length of suture. SU'696

Art Unit: 3734

teaches that it is well-known to use a system like this when attaching two biomaterials (shown in figure, but unlabeled) because it reduces the time needed to apply several stitches because there are fewer needle insertions and it makes the joint created with the sutures stronger because there are no sectors between the adjacent knot stitches (Derwent abstract). It would have been obvious one of ordinary skill in the art to substitute the suture/needle combination taught by Phillips'965 with the suture system taught by SU'696 because the results of the substitution would have been predictable and superior to the system taught by Phillips since the system taught by SU'696 is faster to use and creates stronger joints.

Phillips'965 in view of SU'696 contains a base method (the suture system) upon which the claimed invention is an improvement (different colored threads attached to one needle). Phillips'965 in view of SU'696 is a comparable device that was improved in the same way as Applicant's invention (both Phillips'965 in view of SU'696 and Applicant are claiming color coding threads in a suture system). It would have been obvious to one of ordinary skill in the art to apply the known improvement technique (color-coding) in the same way depending on the threads being tied together to the base device taught by SU'696 and Phillips and the results would have been entirely predictable. See *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 and *KSR International Co. v. Teleflex, Inc.*, 550 U.S.—, 82 USPQ2d 1385 (2007). Further, regarding the color coding, it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative

Art Unit: 3734

sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

Claim 16: Phillips'965 teaches passing sutures through both the cuff (18) and the valve (12).

Claim 17: Philips'965 teaches the method substantially as claimed, except for passing different strands attached to the same needle through the same hole in the tissue. SU'696 teaches passing different suture strands attached to the same needle through the same hole because it reduces the time needed to apply several stitches because there are fewer needle insertions and it makes the joint created with the sutures stronger because there are no sectors between the adjacent knot stitches (Derwent abstract). It would have been obvious one of ordinary skill in the art to substitute the suture/needle combination taught by Phillips'965 with the suture system taught by SU'696 because the results of the substitution would have been predicable and superior to the system taught by Phillips since the system taught by SU'696 is faster to use and creates stronger joints. Regarding the limitation about the diameter of the needle being larger than the diameter of the suture strands, it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

Claim 18: Phillips'965 teaches attaching a valve (column 1, lines 5-20).

Claim 24: Philips'965 in view of SU'696 does not teaches the use of 6 needles. However, since SU'696 teaches 3 needles connected in series, and a device containing

Art Unit: 3734

6 needles connected in series would perform equally as well as 3 needles, it would be an obvious matter of design choice to vary the number of needles depending on the size of the length of the objected being sutured together.

**Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over SU'696 and Phillips'965 and SU'696, as applied to Claim 1, and in further view of Alpern, et al. (US Patent 5,284,293).**

Phillips'965 and SU'696 teach the limitations of Claim 19, except for the use of a package for housing the suture device. Alpern'293 teaches that it is well known in the art to use a dispenser to house suturing devices prior to use because they are packaged in a sterile manner and it is beneficial to be able to see the quantity of suturing devices in a box (column 1, lines 1-34). Therefore it would have been obvious to one skilled in the art at the time the invention was made to place sterile packaged sutures taught by Phillips'965 and SU'696 in a box, as taught by Alpern'293, prior to use because this makes it easier for doctors to see the quantity of suturing devices in the box.

**Claim 5, 6, 7, 8, 10, 11, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soviet Union Patent 513696 (SU'696) in further view of Phillips (US Patent 4,932,965).**

Claims 5, 6 and 8: SU'696 teaches a suturing device containing at least three needles (2) with at least one needle being attached to a double stranded suture (6, 7); each suture strand extends between a pair of connected needles. The needles (2) are removable from the suture strands (Derwent Abstract, line 5). Further, the first end

Art Unit: 3734

needle of SU'696 is attached to a single suture strand and the second end needle is attached to at least a single suture strand (see Figure in SU'696). SU'696 does not teach the use of a visual indicator to identify the individual suture strands.

Phillips'965 teaches the use of a valve sewing ring containing pairs of sutures with needles attached in which each suture pair is color-coded between with two different colors to aid in identification of the individual sutures (column 1, lines 23-42). Regarding color-coding, SU'696 contains a base device (the suture system) upon which the claimed invention is an improvement (different colored threads attached to one needle). Phillips is a comparable device that was improved in the same way as Applicant's invention (both SU'696 in view of Phillips and Applicant are claiming color coding threads in a suture system). It would have been obvious to one of ordinary skill in the art to apply the known improvement technique (color-coding) in the same way, depending on the threads being tied together, to the base device taught by SU'696 and Phillips and the results would have been entirely predictable. See *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 and *KSR International Co. v. Teleflex, Inc.*, 550 U.S.—, 82 USPQ2d 1385 (2007).

Claim 7: SU'696 teaches that suturing device contains three needles (2) that are associated with at least two sutures strands (5, 6, 7, 8).

Claims 10, 11, and 14: Phillips'965 teaches a cuff (16) through which sutures (26) are threaded (column 2, lines 16-32) during aortic valve replacement surgery (column 1, lines 1-20). The cuff is threaded before surgery to reduce implantation time (column 1, lines 23-42). Therefore it would have been obvious to one skilled in the art at



Art Unit: 3734

the time the invention was made to use the device taught by SU'696 and Phillips'965 to suture a cuff prior to surgery in order to reduce implantation time and reduce the risks of the surgery.

**Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over SU'696 and Phillips'965, as applied to Claim 5, and in further view of Ablaza (US Patent 4,632,113).**

Claim 9: SU'696 and Phillips'965 teach the limitations of Claim 9, except for the use of suture pads.

Ablaza'113 teaches the use of suture pads (12 in Figure 1, or 20 in Figure 2) attached to suture strands (18) because they prevent any movement between the suture and the pad, and reduce the tendency of the suture to tangle; further, Ablaza'113 teaches that suture pads are used as anchors when the suturing device is used to close a slit in an aorta (column 2, lines 63-68 and column 3, lines 1-8). Therefore it would have been obvious to one skilled in the art at the time the invention was made to modify the device taught by SU'696 and Phillips'965 with a suture pad because they allow the suture to act as an anchor when closing the aorta.

**Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over SU'696 and Phillips'965, as applied to Claim 5, and in further view of Alpern, et al. (US Patent 5,284,293).**

SU'696 and Phillips'965 teach the limitations of Claim 12, except for the use of a package for housing the suture device. Alpern'293 teaches that it is well known in the art to use a dispenser to house suturing devices prior to use because they are

Art Unit: 3734

packaged in a sterile manner and it is beneficial to be able to see the quantity of suturing devices in a box (column 1, lines 1-34). Therefore it would have been obvious to one skilled in the art at the time the invention was made to place sterile packaged sutures in a box prior to use because this makes it easier for doctors to see the quantity of suturing devices in the box.

**Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over SU'696 and Phillips'965, as applied to Claim 5, and in further view of Ovil, et al. (US Patent 4,702,250).**

SU'696 and Phillips'965 teach the limitations of Claim 13, except for a mechanical suture placement device.

Mechanical suture placement devices are well known in the art and it would have been obvious to include a mechanical suture placement device to place the sutures. Furthermore, Ovil'250 teaches the use of a mechanical suture placement apparatus because suture placement is time consuming and there is a risk of entangling the sutures. Therefore it would have been obvious to one skilled in the art at the time the invention was made to use a mechanical suture placement device to place the sutures because it is easier for the surgeon and reduces the risk of entanglement.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINDSEY BACHMAN whose telephone number is

Art Unit: 3734

(571)272-6208. The examiner can normally be reached on Monday to Thursday 7:30 am to 5 pm, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jackie Ho can be reached on 571-272-4696. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. B./  
Examiner, Art Unit 3734

/(Jackie) Tan-Uyen T. Ho/  
Supervisory Patent Examiner, Art Unit 3773